ANNAMYIA, A NEW GENUS OF ASILIDAE, WITH A REVISION OF THE GENUS APHAMARTANIA SCHINER (DIPTERA).

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Five species were assigned to the genus *Aphamartania* Schiner (= *Cylindrophora* Philippi) during the nineteenth century, and one species belonging to this genus was described recently in the genus *Cophura* Osten Sacken. Very few published records of these species have appeared since, and up to the present no attempt has been made to show relationships nor to facilitate identification of the species. In the present revision of *Aphamartania*, three new species are added, and two of the previously described species are considered as synonyms. A new genus is herein proposed for a new species from Brazil.

This study is based largely on material in the U. S. National Museum, and types of the new species are in the collection of that institution. The writer wishes to express his gratification to Dr. E. A. Chapin and to Mr. C. F. W. Muesebeck for the privilege of studying this material.

ANNAMYIA, new genus.

Annamyia is closely related to the genus *Aphamartania* from which it differs mainly by having the anterior tarsus greatly lengthened, twice as long as the anterior tibia, by having the face produced strongly, and by having the mystax composed of strong bristles over the face. *Annamyia* differs from the genus *Paraphamartania* Engel by the greatly lengthened fore tarsus, by the face being divergent below, and by the facial gibbosity being well elevated.

Annamyia (Brazil), *Aphamartania* (S. Amer.), and *Paraphamartania* (Syria) are quite closely related, the affinities being particularly evident by the male genitalia which are characteristically enlarged with the ventral plate especially bulbous. These three genera are in turn related to the genus *Cophura* Osten Sacken (New World, mostly N. American) which has small male genitalia that are usually largely concealed by the abdomen.

Generic characterization.—Face at antennae about one-half the width of one eye at this level; front slightly convergent above; face moderately divergent below, the distance between the eyes below nearly twice as wide as that at the antennae. Facial gibbosity gradually developed from the antennae, well elevated orally, projecting beyond the eyes, as seen from the side, by a distance as great as the length of the first two antennal segments. Mystax moderately sparse, covering the entire face, composed of stout bristles and a few hairs. First two antennal segments subequal; third antennal segment one and one-half

times the length of first two segments combined, parallel sided, bare of setae; style acutely tapering distally, as long as second antennal segment, two segmented with the proximal division very short, distally provided with a minute spine. Prosternum reduced to an isolated sclerite; mesonotum moderately arched, with moderate vestiture; metasternum widely divided; mesonotum with strong bristles laterally; one pair posterior dorsocentrals; scutellum moderately convex with one pair marginal bristles. Legs elongate, slender; femora without bristles; anterior tibia with a sigmoid distal spur, the anterior basitarsus provided with several minute nodulations in connection with this spur; anterior tarsus very elongate, twice as long as anterior tibia, the basitarsus a little over twice as long as the following two segments, the distal segments progressively decreasing slightly in length; claws slender, acute; pulvilli well developed, about as long as claws. Wing a little over three times as long as broad; marginal, posterior, and anal cells open, the fourth posterior cell narrowed distally; anal lobe well developed. Abdomen elongate, four times as long as wide, depressed, nearly bare; lateral bristles of first segment hardly differentiated from the hairs. Male genitalia enlarged, strongly developed cephalad and caudad, inverted.

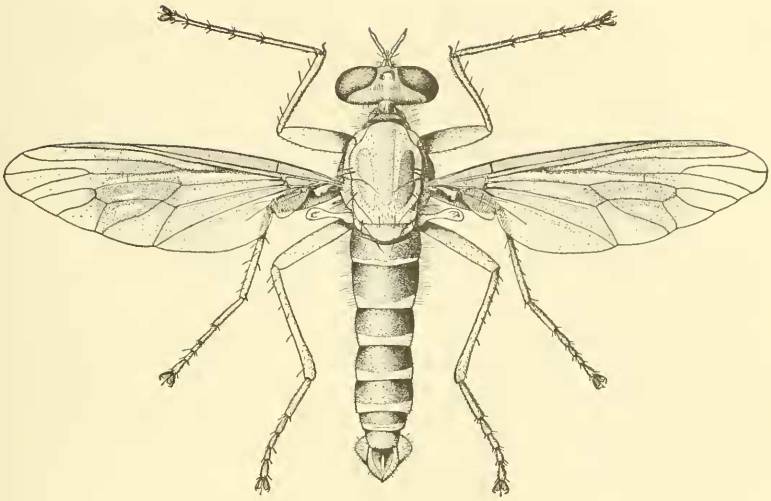
Genotype.—*Annamyia maren*, new species.

Annamyia maren, new species.

A moderately elongate species; thorax reddish with three black mesonotal stripes; abdomen black with a caudal white fascia on each segment; legs castaneous; wings fuliginose, paler distally and in the cells. Length 13 mm. Fig. 1.

Male.—Face and front reddish in ground color, the face white pollinose, bare and shining below antennae, the front brownish pollinose; mystax in large part, bristles of palpi, of proximal two antennal segments, and of ocellar tubercle black; mystax laterally white. Occiput black in ground color, cinereous pollinose, white pilose. Thorax and coxae largely reddish in ground color, the prothorax, mesonotal vittae, scutellum, postnotum, and posterior coxae black in ground color; thoracic pollen thin above, rather buff colored, denser on sides below and whitish; pile of prothorax and pleura white; three mesonotal vittae bare, dull black, broad; mesonotal setae mostly dark brownish, recumbent; mesonotal bristles black; one pair posterior dorsocentrals, and on either side two presutural, one or two supraalar, one or two postcallar; scutellum with one pair marginal bristles. Legs castaneous, shining, clothed with sparse white hairs and black bristles; tarsal setae black. Wings fuliginose, the distal fourth paler, cells interiorly paler, with a clear hyaline streak in first marginal and first basal cells, inner portion of fourth posterior cell and discal cell. Abdomen black in ground color, dull black pollinose, each segment except last with a transverse whitish pollinose fascia covering the caudal fifth and widening on lateral margins to cover most of the segment. Genitalia shining dark yellowish, the distal process of inferior forceps black; ventral plate deeply impressed as seen from above, with a distal bifid prolongation as seen from below; hairs on genitalia above white, bristles below black.

Holotype.—Male, Diamantina, Minas Geraes, Brazil, 14, 18 Nov. '19. (Cornell University Expedition); type no. 54192 in the collection of the U. S. National Museum.



ANNAMYIA MAREN

Fig. 1. Dorsal view of male.

APHAMARTANIA Schiner.

1865. *Cylindrophora* Philippi (preoccupied by Solier, 1849, Coleoptera), Verhl. Zool.-Bot. Ges. Wien, 15 : 704. Genotype, *C. murina* Philippi by original designation.

1866. *Aphamartania* Schiner, Verh. Zool.-Bot. Ges. Wien, 16 : 671. Genotype, *A. frauenfeldi* Schiner by original designation.

1889. *Lynchia* Williston (preoccupied by Weyenbergh, 1881, Diptera), Psyche, 5 : 255. New name for *Cylindrophora* Philippi.

1889. *Myiothera* Williston, Psyche, 5 : 259. New name for *Lynchia* Williston.

1891. *Theromyia* Williston, Trans. Amer. Ent. Soc., 18 : 73. New name for *Myiothera* Williston.

1909. *Aphamartania* Hermann and *Cylindrophora* Hermann, Berl. Ent. Zts., 53 : 155 (1908).

1909. *Aphamartania* Kertesz, Catal. Dipt., 4 : 143.

1930. *Aphamartania* Engel, Flieg. Palae, Reg., 24 : 440.

1932. *Aphamartania* Bromley, Dipt. Patagonia and S. Chile, 5 (3) : 266.

Both Schiner, in erecting the genus *Aphamartania*, and Williston in renaming the genus *Cylindrophora* recognized a generic distinction between the pulvillate and rudimentarily pulvillate forms. Hermann, however, did not favor such a distinction, and Kertesz united these genera in his catalogue. Engel followed Hermann and Kertesz in uniting the groups, and also erected *Paraphamartania* as a new subgenus for the

old world species. *Paraphamartania* is considered a separate genus in this paper. Three distinct groups are recognized in the genus *Aphamartania* in its present sense, each of which may be considered worthy of higher rank in the future.

The three groups may be easily recognized by habitus. The species of the *murina* group are short and stocky, those of the *frauenfeldi* group are robust, but more depressed and elongate; the *marga* group includes a slender species.

The *murina* group is known only from the west side of the Andes, in Chile and Peru. The *frauenfeldi* group appears to be generally distributed over South America east of the Andes, extending northward into Panama. The *marga* group is known from Argentina. *Aphamartania* appears to be a South American complement of the almost entirely North American *Cophura*. *A. marga* is somewhat of a link to the *sodalis* group of *Cophura*.

Aphamartania breviventris (Macquart) is not included in the following key. A new species of the *frauenfeldi* group from Chapada, Brazil (Amer. Mus. Nat. Hist.) is at hand, but is not included due to poor condition of the material.

Key to Species.

1. Pulvilli rudimentary, one-fourth the length of the claws; basitarsus as long as distal tarsal segment; mystax very dense (*murina* group) 2
   Pulvilli well developed, as long as the claws; basitarsus as long as distal two tarsal segments; mystax moderately dense or rather sparse 3
2. Fore femur with several bristles near middle of anterior side; male hind femur with a dense patch of hairs on proximal portion of ventral side; male hind tibia with heavy, black, antero-ventral bristles (Chile) ..... *murina* (Philippi)
   Fore femur without bristles on anterior side; male hind femur with sparse hairs below; male hind tibia with undifferentiated, whitish bristles (Peru) ..... *nana*, new species
3. Hind tibia very slender proximally, the distal fourth enlarged; hind basitarsus enlarged; mystax rather sparse, not reaching eyes laterally; anal cell closed and long petiolate (*marga* group) (Argentina) ..... *marga*, new species
   Hind tibia stout, rather evenly tapering from base to apex; hind basitarsus as slender as other tarsal segments; mystax moderately dense, reaching eyes laterally; anal cell open or closed in the margin (*frauenfeldi* group) 4
4. Wings uniformly fuscus, the marginal cell brown, and the cross-veins and furcations brown maculate (Peru) ..... *digna*, new species
3. Wings brown on proximal half, hyaline on distal half, the median cord dark brown, the proximal fourth with a luteous tinge (Venezuela, Panama) ..... *frauenfeldi* Schiner

Aphamartania murina (Philippi).

1865. *Cylindrophora murina* Philippi, Verh. Zool.-Bot. Ges. Wien, 15 : 704.
1868. *Cylindrophora calopyga* Schiner, Reise Novara : 166. New synonymy.
1891. *Theromyia calopyga* Williston, Trans. Amer. Ent. Soc., 18 : 73. New Synonymy.
1891. *Theromyia murina* Williston, Trans. Amer. Ent. Soc., 18 : 73.
1909. *Aphamartania calopyga* Kertesz, Catal. Dipt., 4 : 144. New synonymy.
1909. *Aphamartania murina* Kertesz, Catal. Dipt., 4 : 144.
1932. *Aphamartania murina* Bromley, Dipt. Patag. and S. Chile, 5 (3) : 266.

Types.—Of *murina*, probably in the Museo Nacional, Santiago; of *calopyga*, probably in the Naturhistorische Staatsmuseum, Wien.

Remarks.—Schiner recognized a good possibility that his species could be synonymous with that of Philippi; but his material differed from the description of *murina* in several color characteristics, that of the abdomen, legs, and wings. The abdomen in the series at hand varies from shining to dull pollinose and from black to various degrees of reddish. The depth of color of the legs is somewhat variable. Schiner's type pair possessed the essential wing maculations, since he described (p. 167), "die kleine Querader und die äusserste Basis der oberen Zinke der Cubitalgabel etwas verdickt." Male genitalia, Plate 16, Fig. 3.

Distribution.—Type locality of *murina*, Santiago, CHILE: of *calopyga*, CHILE. Bromley recorded *murina* from Santiago, CHILE. Material at hand is from Santiago, Angol (December), and Valparaiso, CHILE.

Aphamartania nana, new species.

Closely related to *murina* (Philippi) from which it differs essentially in lacking the bristles which are located medially on the anterior side of the fore femur of *murina;* in lacking the dense brush of white hairs on the proximal portion of the ventral side of the hind femur and the heavy, black, antero-ventral bristles of the hind tibia of the male of *murina;* and in having the periproct of the male genitalia unarmed.

Male.—Head whitish pollinose anteriorly, ochreous pollinose posteriorly; vestiture pale yellowish, nearly white anteriorly. Mystax very dense; ocellar tubercles with many short bristles; occiput densely clothed with hairs and bristles. Thorax black in ground color except the humeral calli, which are reddish. Mesonotum ochreous pollinose with a dull brown, geminate middorsal stripe, and with a moderately wide lateral stripe on each side, which is bright, velvety black, interrupted at the transverse suture; clothed with moderately dense, rather fine, pale yellowish hairs; dorsocentrals post sutural, but little differentiated; lateral bristles strong, pale yellowish; on each side four presutural, three or four supraalar, and three on posterior callus. Scutellum entirely tawny pollinose, with five pairs strong marginal bristles. Thoracic

pleura brown pollinose, with pale yellowish vestiture. Femora shining black except narrow distal tip yellowish; moderately clothed with fine, white hairs and distal yellowish bristles above; posterior femur with a dorso-lateral row of five pale bristles, the ventral aspect with only a few scattered hairs and scarcely differentiated bristles. Tibiae and tarsi yellowish, the tibiae fuscus below especially distally; clothed with pale yellowish bristles, the bristles below at distal ends of tibiae and below on tarsi dark brown; anterior tarsus including claws about as long as anterior tibia; claws black, yellowish at base; pulvilli about one-fourth length of claws. Wings pale brownish with fuscus maculations at forks of veins on median cord of wing and at distal fork of posterior radial vein. Abdomen shining, the first segment thinly brown pollinose; segments one to three entirely black, the distal segments deep yellowish except for dorsal black maculation on four and brownish caudal margins of the segments; vestiture consisting of moderately dense hairs laterally, pale yellowish, more distinctly yellowish caudally. Genitalia bright yellowish with strong, yellowish bristles; periproct and superior forceps simple; inferior forceps with an elongate distal projection which is bifid and directed inwards at distal end; ventral plate strongly developed. Length, 11 mm.

Holotype.—Male, Verrugas Canyon, Lima, PERU, 7,000 ft., 7 . 7 . 28 (R. C. Shannon); type no. 54193 in the collection of the U. S. National Museum.

Aphamartania frauenfeldi Schiner.

1866, *Aphamartania frauenfeldi* Schiner, Verh. Zool.-Bot. Ges. Wien, 16 : 671.
1867. *Aphamartania frauenfeldi* Schiner, Verh. Zool.-Bot. Ges. Wien, 17 : 372.
1891. *Aphamartania frauenfeldi* Williston, Trans. Amer. Ent. Soc., 18 : 73.
1909. *Aphamartania frauenfeldi* Kertesz, Catal. Dipt., 4 : 144.
1929. *Aphamartania frauenfeldi* Engel, Konowia, 8 (4) : 468.
1931. *Cophura panamensis* Curran, Amer. Mus. Nov., 487 : 6. New synonymy.

Types.—Of *Frauenfeldi*, probably in the Naturhistorische staatsmuseum, Wien; of *panamensis*, in the American Museum of Natural History, New York.

Remarks.—It seems entirely reasonable that *panamensis* is the same as *frauenfeldi*. Schiner has given an excellent description which holds equally well for material from Panama. Dr. Curran first recognized the true generic reference of *panamensis*. The type of *panamensis* has been seen by the writer. Male genitalia, Plate 16, Fig. 1.

Distribution.—*Frauenfeldi* was described from VENEZUELA; *panamensis* from Barro Colorado Island, CANAL ZONE (Jan.–Feb.). Material at hand is from Alhajuelo, PANAMA (March). The writer feels that Engel's record from Bolivia should not be accepted until the identification is rechecked.

Aphamartania digna, new species.

Closely allied to *frauenfeldi* Schiner, differing essentially in having the wings rather uniformly fuscus rather than hyaline on the distal half; the male genitalia smaller with the distal section of the inferior forceps but little widened with the median tooth very small (Plate 16, Fig. 2). The front is entirely pollinose, the frontal setae black; the mystax extends above more on either side; the lateral hairs of the first abdominal segment are black, the mesonotal setae and the bristles on the legs are entirely black; and the legs are tawny rather than castaneous.

Male.—Head ochreous pollinose, the front and vertex brown pollinose; mystax, beard, vestiture of palpi, occiput, and proximal antennal segments whitish, frontals and ocellars in part black; antennae brown. Thorax tawny in ground color except for black mesonotal vittae; ochreous pollinose except for vittae; mesonotum clothed except on the vittae with black, stout setae; several black posterior dorsocentrals poorly differentiated; lateral bristles yellowish or black: three presutural, two supraalar, three postcallar on either side; mesonotal vittae rather broad, dull black, the lateral vittae nearly divided at the transverse suture. Scutellum ochreous pollinose, with four pairs strong, marginal, yellowish bristles. Vestiture of prothorax, coxae, and hypopleura pale. Legs tawny, the femora a little darker; bristles entirely black; fine setae on femora and tibiae pale; anterior basitarsus about twice as long as distal tarsal segment. Wings rather evenly fuscus, the costal cell and cross-veins and furcations brownish. Abdomen dull black above, brown pollinose, the lateral margin evenly and the venter tawny; lateral hairs short, thin, white. Genitalia tawny with pale yellowish hairs; distal portion of inferior forceps with broad inner projection, beyond this elongate, with the small median tooth, curved inwardly. Length, 9.5 mm.

Female.—Similar, the legs a little paler, the distal abdominal segments tawny. Length, 11 mm.

Holotype.—Male, Shishmay, Huanuco, PERU, September 17, 1937 (Felix Woytkowski); type no. 54194 in the collection of the U. S. National Museum.

Paratype.—Female, Shishmay, Huanuco, PERU, September 17, 1937 (Felix Woytkowski).

Aphamartania breviventris (Macquart).

1847. *Dasypogon breviventris* Macquart, Dipt. Exot., suppl. 3 : 181. Fig.
1854. *Dasypogon breviventris* Walker, List. Dipt. Brit. Mus., 6, suppl. 2 : 435.
1891. *Theromyia breviventris* Williston, Trans. Amer. Ent. Soc., 18 : 73.
1909. *Aphamartania beviventris* Kertesz, Catal. Dipt., 4 : 143. Species name is misspelled.

Types.—Possibly in the Museum Histoire Naturelle, Lille, or in the Museum National d'Histoire Naturelle, Paris.

Remarks.—*A. breviventris* has not been recognized nor included in the key. Macquart's description clearly indicates

close relationship in the *frauenfeldi* group, but the diagrammatic drawing showing the mystax is misleading.

Distribution.—Described from Rio-Negro.

Aphamartania marga, new species.

Marga differs from all other species included in the genus by the slender body, the slender legs, the enlarged hind basitarsus and distal end of the hind tibia, the small, scant mystax, and the single pair of marginal scutellars.

Male.—Head with pollen of face buff, of front and vertex dark brown, of occiput cinereous. Hairs of head white; mystax sparse, not reaching eyes laterally and nearly divided medially; ocellars short, numerous. Thorax largely yellowish in ground color except disc of mesonotum, buff pollinose except disc of mesonotum. Prothorax rather sparsely clothed with long white hairs. Mesonotum except lateral margins and calli black, velvety brown pollinose; clothed laterally and along the line of the dorsocentrals with long white hairs; postsutural dorsocentrals long; lateral bristles white: three presutural, three supraalar, and three postcallar on either side. Scutellum with disc brownish pollinose, marginally cinereous pollinose, with two white scutellars. Hypopleural bristles fine. Legs shining brown, the hind femur below and proximal two-thirds of hind tibia tawny; bristles of anterior four legs black, of posterior pair whitish; setae of legs white except on anterior four tibiae and tarsi black; anterior basitarsus twice as long as last tarsal segment; hind femora slender especially proximally, without bristles; hind tibia incrassate on distal fourth, hind basitarsus incrassate. Wings brownish on proximal half, fading into a paler fuscus distally; costal cell darker brown; anal cell closed and long petiolate. Abdomen shining black above, the lateral margins yellowish and extending inwards along caudal margin of each serment; rather long, white hairs sparsely on sides of proximal two segments. Genitalia yellowish, the superior forceps brownish; clothed with white hairs and bristles (Plate 16, Fig. 4). Length 9 mm.

Female.—Similar. Length, 10 mm.

Holotype.—Male, Tucuman, ARGENTINA, 7.XII.1927 (H. E. Box); type no. 55469 in the collection of the U. S. National Museum.

Paratype.—Female, Tucuman, ARGENTINA, XI.30.28 (H. A. Jaynes).

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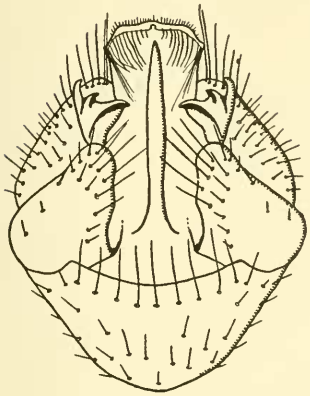
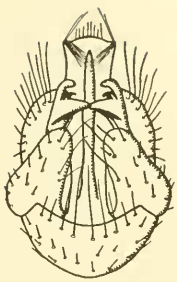
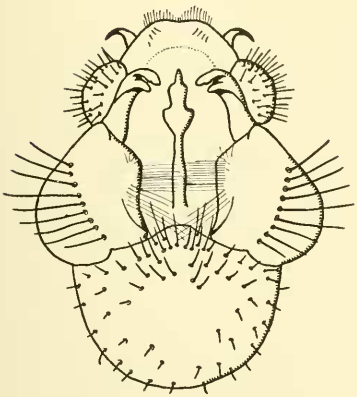
HERMANN, F. 1909. Beitrag zur Kenntnis der Asilidae (IV) Dipt. Berliner Entomologische Zeitschrift (1908), 53 : 155.



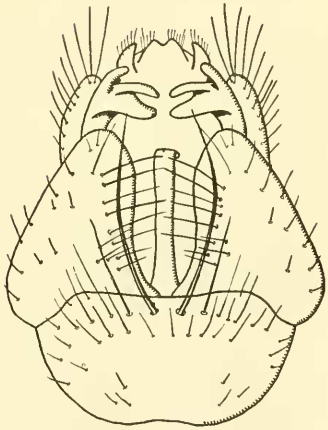
1. A. FRAUENFELDI



2. A. DIGNA



3. A. MURINA



4. A. MARGA

Explanation of Plate.

Ventral aspect of male genitalia: 1. *Aphamartania frauenfeldi*, Schiner, male, Alhajuelo, Panama, March 4, 1912 (August Busck); 2. *A. digna*, new species, holotype male; 3. *A. murina* (Philippi), male, Angol, Chile, December 27, 1929; 4. *A. marga*, new species, holotype, male.

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A NEW STEATOCOCCUS FROM MEXICO (HEMIPTERA, COCCOIDEA).

By Harold Morrison,
Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture.

The following description of a new Mexican *Steatococcus* has been prepared for immediate publication at the request of its collector, Dr. Sally Hughes-Schrader, who wishes the name for use in connection with her publication of extended cytological studies on the species.

Steatococcus tuberculatus, new species.

Adult female.—Shape characteristic for genus, strongly ovoid, broadest and high convex through middle of abdomen, anterior end much narrowed. Length of fully distended adult up to 7 mm. long by 6 mm. wide across abdomen and about 4.5 mm. high. Color in life, according to notes supplied by the collector, blue purple dusted with wax, and showing dorsally four tufts of whitish or yellowish wax and eight pairs of marginal tufts of white wax; dried specimens reddish brown, with the dorsal wax tufts mostly inconspicuous or not evident and the marginal tufts sometimes similarly inconspicuous but with a recognizable maximum total of ten pairs of wax-covered spots, individuals evidently, under some conditions, more or less heavily dusted with wax powder; dorsal surface likewise exhibiting four rows of short but very evident digitate tubercles, each bearing several stout setae, the two inner, submedian rows each including three or four such tubercles, apparently on the three thoracic segments and the head, the two outer, intermediate, rows usually each including six such tubercles; in addition with two similar more or less conspicuous marginal tubercles